REMARKS

This application has been carefully reviewed in light of the Office Action dated December 28, 2004. Claims 1 to 21 and 23 to 37 remain in the application. Claims 1, 9, 21 and 32 to 37 are the independent claims. Reconsideration and further examination are respectfully requested.

Applicants wish to thank the Examiner for the indication that Claims 9 to 20, 34 and 35 would be allowable if rewritten to overcome substantive rejections in which Claims 9, 34 and 35 were rejected under 35 U.S.C. § 112, second paragraph. In this regard, the language in question in each of Claims 9, 34 and 35 has been amended so as to make the subject matter thereof even clearer. Accordingly, Claims 9 to 20, 34 and 35 are believed to be in condition for allowance and therefore, withdrawal of the § 112 rejection is respectfully requested.

Claims 1, 3, 6, 8, 21, 23, 24, 30 to 33, 36 and 37 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,295,236 (Bjorge), Claims 27 to 29 were rejected under 35 U.S.C. § 103(a) over Bjorge, Claims 2, 4, 5 and 7 were rejected under § 103(a) over Bjorge in view of U.S. Patent No. 5,483,361 (Shimizu), and Claim 25 was rejected under § 103(a) over Bjorge in view of U.S. Patent No. 5,659,407 (Andresen). Reconsideration and withdrawal of the rejections are respectfully requested.

The present invention concerns synthesizing attribute information for overlapping bitmap images. According to one aspect of the invention, if first and second bitmap image data generated in accordance with first and second commands overlap each other, attribute information is synthesized at the overlapped area of the first bitmap image data and attribute information is synthesized at the overlapped area of the second bitmap image data in accordance with a predetermined rule. As a result, if two bitmap images overlap one another, the rendering of the overlapping images can be synthesized so as to obtain a better printout.

Referring specifically to the claims, amended independent Claim 1 is an image processing apparatus comprising attribute information generation means for generating attribute information indicating an attribute of an image in correspondence with a command that represents the image, bitmap data generation means for generating bitmap image data by rendering the command, attribute synthesis means for, if first and second bitmap image data generated in accordance with first and second commands overlap each other, synthesizing attribute information at an overlapped area of the first bitmap image data and attribute information at an overlapped area of the second bitmap image data in accordance with a predetermined rule, and image processing means for performing an image process on the bitmap image data in accordance with the attribute information.

Amended independent Claims 32 and 33 are method and storage medium claims, respectively, that substantially correspond to Claim 1.

The applied art, alone or in any permissible combination, is not seen to disclose or to suggest the features of Claims 1, 32 and 33. More particularly, the applied art is not seen to disclose or to suggest at least the feature of, if first and second bitmap image data generated in accordance with first and second commands overlap each other, synthesizing attribute information at an overlapped area of the first bitmap image data and attribute information at an overlapped area of the second bitmap image data in accordance with a predetermined rule.

Bjorge is merely seen to disclose that edge portions of objects are used to generate trap vectors in a PDL file. According to the patent, an image is divided into tiles and each tile is rasterized into a bit map. Each bit map tile is then analyzed to produce the edge data tht ultimately results in the trap vectors. Thus, the tiles of Bjorge each represent individual bitmaps that do not overlap one another. Moreover, the overlapping objects within each bit map are not overlapping bitmaps. Accordingly, since there are no overlapping bitmaps in Bjorge, Bjorge cannot synthesize attribute information at an overlapped area of a first bitmap image data and attribute information at an overlapped area

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of a second bitmap image data in accordance with a predetermined rule. Therefore, Claims 1, 32 and 33 are not anticipated by Bjorge.

With regard to the § 103(a) rejections in which Shimizu was applied, the rejections are traversed. In more detail, Shimizu, by virtue of its issue date of December 3, 2002, qualifies as prior art to the subject application only under § 102(e) and as evidenced by the assignee listed on its cover page, is assigned to Canon Kabushiki Kaisha, the same assignee as the subject application. In this regard, a deed of assignment has been recorded in the subject application at Reel 010661, Frame 0796 in which the present invention has been assigned to Canon Kabushiki Kaisha, and Applicants respectfully submit that the subject application was subject to an obligation of assignment to Canon Kabushiki Kaisha at the time of the invention. In view of the foregoing, in accordance with 35 U.S.C. § 103(c), the U.S. patent to Shimizu cannot be applied as a reference against the subject application in a rejection under § 103(a). Accordingly, the rejection of Claims 2, 4, 5 and 7 under § 103(a) over Bjorge is respectfully traversed and the Examiner is requested to withdraw the rejections.

Nonetheless, Shimizu has been studied but is not seen to add anything that, when combined with Bjorge, would have disclosed or suggested at least the feature of an attribute synthesis means/step for, if first and second bitmap image data generated in accordance with first and second commands overlap each other, synthesizing attribute information at an overlapped area of the first bitmap image data and attribute information at an overlapped area of the second bitmap image data in accordance with a predetermined rule.

In view of the foregoing amendments and remarks, Claims 1 to 8, 32 and 33 are believed to be allowable.

In a related aspect of the invention, if bitmap image data is rendered in accordance with an object represented by a command for character/line, the apparatus can easily execute image processing for character/line because the attribute information

corresponding to the image data indicates character/line. However, if bitmap image data is rendered in accordance with an object represented by a command for bitmap image, there is the possibility that the bitmap image may include a character/line portion. In this case, the present invention determines a range of the bitmap image data, which is to undergo an image area discrimination of further discriminating a character/line image region, on the basis of the attribute map information which is generated, according to the command for the bitmap image, by the generation means. As a result, the range to be discriminated for image processing can be minimized.

With specific reference to the claims, amended independent Claim 21 is an image processing apparatus for processing and outputting input image data, comprising input means for inputting image data composed of a plurality of objects, the objects being represented by at least a command for a character/line or a command for a bitmap image, rendering means for rendering the objects into bitmap image data, generation means for generating attribute map information indicating a configuration of the bitmap image data on the basis of the bitmap image data rendered by the rendering means and attributes of the objects, the attributes being determined based on the type of the command, and determination means for determining a range of the bitmap image data, which is to undergo an image area discrimination of further discriminating a character/line image region, on the basis of the attribute map information which is generated, according to the command for the bitmap image, by the generation means.

Amended independent Claims 36 and 37 are method and storage medium claims, respectively, that substantially correspond to Claim 21.

The applied art is not seen to disclose or to suggest the features of Claim 21, 36 and 37, and in particular, the applied art is not seen to disclose or to suggest at least the feature of determining a range of bitmap image data, which is to undergo an image area discrimination of further discriminating a character/line image region, on the basis of

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attribute map information which is generated, according to a command for the bitmap image, by the generation means/step.

As stated above, Bjorge is merely seen to disclose that edge portions of objects are used to generate trap vectors in a PDL file. However, Bjorge is not seen to disclose or to suggest at least the feature of determining a range of bitmap image data, which is to undergo an image area discrimination of further discriminating a character/line image region, on the basis of attribute map information which is generated, according to a command for the bitmap image, by the generation means/step.
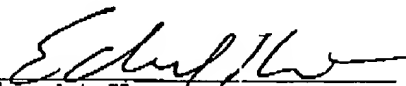
The Office Action took the position that the trapping analyzer 214 of Bjorge corresponds to the claimed determination means. However, the trapping analyzer merely discriminates character/line portions for characters and lines, versus discriminating bitmap images, but does not perform a further discrimination of the bitmap images to discriminate characters/lines therein. Accordingly, Bjorge does not determine a range of bitmap image data, which is to undergo an image area discrimination of further discriminating a character/line image region, on the basis of attribute map information which is generated, according to a command for the bitmap image, by the generation means/step. Therefore, Claims 21, 36 and 37 are not anticipated by Bjorge.

Andresen is merely seen to disclose separating an image into R, G, and B frame buffers in accordance with attribute information. Thus, Andresen merely separates an image based on color information, independent of any information indicating a character/line region. Accordingly, Andresen is not seen to disclose or to suggest anything that, when combined with Bjorge, would have disclosed or suggested at least the feature of determining a range of bitmap image data, which is to undergo an image area discrimination of further discriminating a character/line image region, on the basis of attribute map information which is generated, according to a command for the bitmap image, by the generation means/step. and therefore, Claims 21, 36 and 37 are believed to be allowable.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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